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# *UROCHLOA SUBQUADRIPARA* (POACEAE: PANICEAE) NEW TO TEXAS AND A KEY TO *UROCHLOA* OF TEXAS

Stephan L. Hatch
S.M. Tracy Herbarium (TAES)
Department of Ecosystem Science and Management
Texas A&M University
College Station, TX 77843-2138, U.S.A.
s-hatch@tamu.edu

## ABSTRACT

*Urochloa subquadripara* is reported as introduced into Texas. A key to separate the 13 species of *Urochloa* in Texas is presented along with an image of the newly reported species.

**KEY WORDS**: Poaceae, *Urochloa*, Texas, introduced, invasive plant

*Urochloa* P. Beauv. is primarily a grass genus of Old World origin. Thirteen of the estimated 100 species (Wipff & Thompson 2003) worldwide occur in Texas. This genus was separated from closely related or similar Paniceae by Wipff et al. in 1993. *Urochloa* (Wipff & Thompson 2003) is described as having terminal and axilliary panicle inflorescences with 2 to several spicate primary unilateral branches. Spikelets are solitary, paired, or in triplets and occur in 1–2 (4) rows per primary branch. With 2 florets per spikelet, the upper floret is fertile, indurate and rugose to verrucose, the lower floret sterile or staminate. A key to three *Urochloa* species was published by Wipff et al. (1993).

Eight of the Texas taxa are introduced (five invasive) and five are native to North America. The introduced taxa are native to tropical or subtropical regions of the world and their points of introduction appear to be from the coast or south Texas and following a period of adaptation move inland and/or to the north.

*Urochloa subquadripara* (Trin.) R.D. Webster has recently been collected in south Texas (Hidalgo County). The specimens were identified (Wipff & Thompson 2003) and verified using specimens in the S.M. Tracy Herbarium (TAES) at Texas A&M University.

This new introduction to Texas is recent. Taxonomic keys had not keyed or described *Urochloa subquadripara* in the United States (Hitchcock 1935). Hitchcock (1951) gave mention of the species without including it in the key, stating that it is occasionally planted in Florida as a potential forage crop. Later, Hall (1978) and others, including Wunderlin (1982) and Wipff and Thompson (2003) have included the species in descriptions and keys. Más and Garcia M. (1990) discussed the occurrence of the species in Puerto Rico and reported it to be a good forage.

*Urochloa subquadripara* was not reported as being found in Texas by Gould (1975) and others, including Hatch et al. (1990), Fox and Hatch (1996), Wipff et al. (1993), and most recently Jones et al. (1997). Following are the species description, voucher information, and a digital image of *U. subquadripara*, and a key to *Urochloa* of Texas.

***Urochloa subquadripara*** (Trin.) A. Hitchc., Lignan Sci. J. 7: 214. 1931. TROPICAL SIGNALGRASS.

Fig. 1. Creeping annuals or short-lived perennials. **Culms** 40 cm long, apex erect, decumbent and rooting at nodes, nodes glabrous. **Leaves** mostly cauline. **Sheaths** terete, shorter than internodes. **Ligules** ca 1–1.3 mm long, a ciliate membrane. **Blades** to 25 cm long, 4–11 mm wide, flat (thin), glabrous or pubescent, margins not crisp. **Panicles** of 3–8 spicate primary unilateral branches; branches to 9 cm long (Fig. 1), 1 per node, pedicels scabrous (short). **Spikelets** 3.3–3.7 mm long. **First glumes** 1.5–1.7 mm long, one half spikelet or less spikelet length. **Second glumes** 3.1–3.6 mm long (apex not reticulate-veined). **Lower florets** neuter (apex not reticulate-veined). **Lower floret paleas** well-developed. **Upper floret lemmas** 3.1–2.5 mm long, ca 1 mm wide, oval, stramineous. **Chromosome numbers** 2*n*= 36, 54, and 72. **Flowering period** May to August.

Figure 1

**Distribution**. Texas: a disturbance species of sandy loam soil that is new to Texas (Area 6), Hidalgo County. General: native to tropical Asia, introduced into Florida, reportedly Georgia, Mexico, and the Lesser Antilles.

**Voucher Specimens:** TEXAS. **Hidalgo Co.**: Weslaco, USDA-ARS Laboratory (near GIS/Remote Sensing Building), 2413 East Highway 83, growing in a yard. 19 Aug 2008, *Everitt s.n.* (TAES) and 1 Jun 2008, *Everitt s.n.* (TAES); Weslaco, Memorial Elementary School, 1700 South Border, E side of school, 19 Aug 2008, *Everitt s.n.* (TAES).

## KEY TO THE *UROCHLOA* SPECIES OF TEXAS

1. Panicle branches verticillate at inflorescence base; plants perennial ..... ***U. maxima***
1. Panicle branches single or paired at the inflorescence base; plants annual or perennial.

    2. Spikelets single at mid-branch.

        3. Panicle branches triquetrous in cross-section ..... ***U. ciliatissima***
        3. Panicle branches crescent shaped or flat in cross-section.

            4. Upper lemmas awned, awns 0.4–1.3 mm long.

                5. Plants annual; leaf blade margins crisp, usually with pappilose based hairs ..... ***U. paniciodes***
                5. Plants perennial; leaf blade margins flat, glabrous.. ..... ***U. mosambicensis***

4. Upper lemmas awnless or slightly mucronate; awns less than 0.25 mm long.

6. Spikelets in single row on panicle branches ..... ***U. brizantha***
6. Spikelets in 2 rows on branches.

7. First glumes 5–7-veined; glumes separated by an internode less than 0.3 mm long; spikelets more than 4 mm long ..... ***U. platyphylla***
7. First glumes (7–) 9–11-veined; glumes separated by an internode 0.3–0.5 mm long; spikelets 3.3–3.7 mm long ..... ***U. subquadripara***

2. Spikelets paired at mid branch.

8. Panicle branches triquetrous in cross-section.

9. Spikelets 5–6.2 mm long ..... ***U. texana***
9. Spikelets 2.2–4.1 mm long.

10. Second glumes and lower lemma apices reticulate-veined.. ..... ***U. fusca***
10. Second glumes and lower lemma apices not reticulate-veined.

11. Panicle branches with dense papillose hairs..... ***U. arizonica***
11. Panicle branches with few or no papillose hairs..... ***U. ramosa***

8. Panicle branches flat in cross-section.

12. Spikelets 1.8–2.2 mm long; culms less than 35 cm tall; plants annual ..... ***U. reptans***
12. Spikelets more than 2.5 mm long; culms more than 30 cm tall; plants perennial.

13. Upper lemmas awned, awns 0.5–1.1 mm long; panicle branches 2–8 ..... ***U. mosambicensis***
13. Upper lemmas awnless to murcronate, mucro less than 0.3 mm long; panicle branches usually 10–25 ..... ***U. mutica***


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